

**B O I E S , S C H I L L E R & F L E X N E R L L P**

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September 19, 2005

**VIA ELECTRONIC FILING**

Clerk of the Court  
United States District Court for the District of New Jersey  
Clarkson S. Fisher Building & U.S. Courthouse  
402 East State Street  
Trenton, NJ 08608

**Re: Broadcom Corporation v. Qualcomm Incorporated**  
**Civ. Action No. 05-3350**

Dear Sir or Madam:

Enclosed for filing is a First Amended Complaint. Kindly advise us when this First Amended Complaint has been received and filed by the Court.

Thank you for your attention to this matter.

Very truly yours,

s/ David S. Stone

David S. Stone

Enclosures

cc: Honorable Mary L Cooper (via Federal Express)  
Honorable John J. Hughes (via Federal Express)  
David R. Marriott (via Federal Express)  
William J. O'Shaughnessy (via Federal Express)  
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**IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF NEW JERSEY**

<p>BROADCOM CORPORATION,</p> <p>Plaintiff,</p> <p>v.</p> <p>QUALCOMM INCORPORATED,</p> <p>Defendant.</p>	<p>Civil Action No. 05-3350 (MLC)</p> <p>FIRST AMENDED COMPLAINT</p> <p>JURY TRIAL DEMANDED</p>
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Plaintiff Broadcom Corporation (“Broadcom”), through its undersigned attorneys, by and for its First Amended Complaint, upon personal knowledge as to its own acts, and on information and belief as to all others based upon its own and its attorneys’ investigation, alleges as follows:

**I.**

**SUMMARY OF THE ACTION**

1. Plaintiff Broadcom is a California corporation with its principal place of business at 16215 Alton Parkway, Irvine, California, 92618. Broadcom also operates a significant facility in Matawan, New Jersey, which is an important part of the Broadcom business at issue in this lawsuit. Defendant Qualcomm Incorporated (“Qualcomm”) is a Delaware corporation with its principal place of business at 5775 Morehouse Drive, San Diego, California, 92121. Qualcomm also transacts and is registered to do business in and is found within New Jersey, where Qualcomm has appointed an agent for service of process.

2. This complaint arises, first, from defendant Qualcomm’s illegal and anticompetitive conduct in the markets for the technology and chipsets that operate cell phones employing Wideband Code Division Multiple Access (“WCDMA”), a third generation (“3G”) technology that is implemented through a mobile telephone standard known as the Universal Mobile Telephone System (“UMTS”), and, second, from Qualcomm’s use of mergers and acquisitions, including its recent announcement of Qualcomm’s intention to acquire Flarion Technologies, Inc. (“Flarion”), to substantially lessen acquisition. Qualcomm’s acquisition of Flarion, a South Bedminster, New Jersey developer of wireless technologies called Orthogonal Frequency Division Multiplexing and Orthogonal Frequency Division Multiplexing Access

(“OFDM/OFDMA”), would substantially lessen competition and extend Qualcomm’s existing monopoly power into next generation wireless technologies.

***Qualcomm’s Anticompetitive Conduct Relating to WCDMA Technology and Chipsets***

3. Qualcomm holds certain patents that it has asserted are “essential” to WCDMA technology and the UMTS standard. Thus, international and United States standard-setting bodies only adopted UMTS as a mobile telephone standard after Qualcomm represented in writing that it would license its WCDMA patents on fair, reasonable and non-discriminatory (that is, so-called “FRAND”) terms. The adoption of the UMTS standard led mobile telephone services carriers to invest billions of dollars in developing UMTS phone systems. But after the UMTS standard was adopted, giving Qualcomm monopoly power in the WCDMA technology markets, Qualcomm disregarded its FRAND commitments. Qualcomm has instead leveraged its WCDMA patents in an attempt to expand its monopoly power into the separate market for the sale of the UMTS chipsets that provide basic operational functionality for UMTS phones. Indeed, Qualcomm is now employing with respect to WCDMA and UMTS the same types of unlawful and anticompetitive tactics that Qualcomm has already used to gain tight monopoly control of the markets for technology and chipsets applicable to another third-generation mobile phone standard based on Code Division Multiple Access (“CDMA”) technology.

4. Broadcom has developed UMTS chipsets that would compete with Qualcomm’s. In this action, Broadcom seeks to prevent Qualcomm from repeating its pattern of unlawful and anticompetitive conduct to exclude Broadcom from the UMTS chipset market, monopolize the UMTS chipset market, and harm consumers.

5. Cell phones today principally use either of two leading second generation, or “2G” wireless technologies. Many wireless carriers, including Cingular Wireless, the United States’

largest, currently use the second-generation system called Global System for Mobility (“GSM”). Other carriers, such as Verizon Wireless, use 2G CDMA technology. These carriers and others are currently upgrading their cell phone systems to offer 3G systems that expand cell phone capabilities to include services such as high-speed Internet connectivity.

6. GSM carriers are upgrading their systems to UMTS. UMTS permits a dual-mode approach that is backwards compatible with GSM phones, but also features advanced WCDMA capabilities that provide 3G functionality. Carriers currently using CDMA-based technologies are largely upgrading their systems to use 3G variants of CDMA technology.

7. Despite the similarity in their names, WCDMA- and CDMA-based systems and devices are incompatible and non-interchangeable. To develop either of these systems requires literally billions of dollars of network and infrastructure investments. Wireless service carriers made decisions to install second-generation systems using either GSM or 2G CDMA technology, and both the massive sunk investment in the system and the substantial costs that would be incurred to establish a different system, made it prohibitively expensive to switch to a different technology. Now, because the transition from GSM to UMTS requires much smaller investments than would a transition from GSM to 3GCDMA, and because the transition from 2GCDMA to 3G CDMA requires much smaller investments than would a transition from 2G CDMA to UMTS, carriers with GSM systems are virtually certain to transition to UMTS, while carriers with 2G CDMA systems are virtually certain to transition to 3G CDMA.

8. Qualcomm has already acquired and maintained monopoly control over the sale of 2G and 3G CDMA chipsets, markets in which Qualcomm now possesses an approximately *ninety* percent market share.

9. Qualcomm also has monopoly power in 3G markets for technology subject to patents that Qualcomm has asserted are “essential” for implementation of any WCDMA-based system, including UMTS. Qualcomm obtained that power when it secured, based on its FRAND commitments that it never intended to meet, the incorporation of WCDMA technology into wireless phone standards.

10. As carriers around the world are moving from GSM to UMTS, and as the number of subscribers to UMTS is growing rapidly, Qualcomm is acting to exclude competition and extend its monopoly grip – already firm in 2G and 3G CDMA markets and the markets for its WCDMA technology – into the chipsets that will power millions of UMTS-based phones around the world.

11. Qualcomm has plainly and willfully disregarded its repeated commitments to license its WCDMA technology on FRAND terms, and has engaged in a series of anticompetitive practices that are anything but fair, reasonable and non-discriminatory. Through those practices, Qualcomm has used its self-proclaimed essential WCDMA patents to attempt to monopolize, and effectively thwart, meaningful competition in the market for UMTS chipsets.

12. Broadcom has made substantial investments to develop advanced, competitive UMTS chipsets, which by definition must include WCDMA capability. As summarized below, rather than competing against Broadcom on the merits, Qualcomm has refused to license to Broadcom on FRAND terms the patents that Qualcomm asserts are essential for UMTS chipsets, and Qualcomm has used its unlawful and anticompetitive licensing and exclusivity agreements with cell phone manufacturers to undermine competition.

***(a) Refusal to Provide Broadcom a WCDMA Patent License in Violation of FRAND Commitments***

13. Qualcomm has refused to provide Broadcom with a license for Qualcomm’s purported essential WCDMA patents on FRAND terms. Instead, disregarding its FRAND obligations,

Qualcomm has demanded from Broadcom a wide array of terms that are aimed to cripple Broadcom as a competitor. Broadcom does not disclose the specifics of those terms here, because Qualcomm, in an effort to protect its discriminatory and anticompetitive practices, required Broadcom, and requires others seeking to negotiate WCDMA technology licenses, to enter into non-disclosure agreements. In general terms, however, the types of unfair, unreasonable, and discriminatory terms demanded by Qualcomm include:

- a. demanding that the licensee agree to pay royalties on components over which Qualcomm has no claim to patent rights, which would undermine the licensee's ability and incentive to develop and include innovative functionality;
- b. insisting that the licensee agree to grant Qualcomm a cross-license to the licensee's intellectual property in a way that is far broader than the license that Qualcomm would provide to the licensee;
- c. requiring that the licensee sell UMTS chipsets only to customers that are also licensed by Qualcomm, so that Qualcomm can collect double royalties from the licensee's customers; and
- d. imposing on the licensee terms that would require the licensee to reveal to Qualcomm detailed and sensitive price information about the licensee's dealings with its customers, including those customers for whose business the licensee and Qualcomm would be competing directly.

***(b) Discriminatory Linkage of Licensing of Qualcomm's WCDMA Patents to Cell Phone Manufacturers' Purchase of Qualcomm's UMTS Chipsets***

14. Similarly, in separate patent license agreements with the manufacturers of cell phones using Qualcomm's WCDMA technology (as all UMTS phones must pursuant to the international standards adopted based on Qualcomm's FRAND representations), Qualcomm has, without any



legitimate technical or other business justification, engaged and is engaging in discrimination based on whether these manufacturers also agree to purchase Qualcomm chipsets. Such discrimination expressly links access to Qualcomm's "essential" patents, over which it possesses monopoly control, to licensees' use of Qualcomm's UMTS chipsets rather than an actual or would-be competitor's. For example:

- a. Qualcomm requires cell phone manufacturers to pay high up-front fees for access to Qualcomm's essential patents, but reduces or eliminates those fees if the manufacturers agree to buy Qualcomm's UMTS chipsets.
- b. Through a practice sometimes referred to as "price netting," Qualcomm requires cell phone manufacturers to pay effectively higher royalties for Qualcomm's essential patents for WCDMA if the manufacturers use a chipset from a Qualcomm competitor.

15. Price netting alone imposes a significant chipset price penalty on Qualcomm's would-be competitors. For example, if a cell phone manufacturer is required to pay Qualcomm a 5% royalty for Qualcomm's WCDMA patents, a price netting term would impose a penalty of 5% of the chipset price on a Qualcomm competitor.

***(c) Exclusive Dealing***

16. Qualcomm has also provided cell phone manufacturers substantial payments or other economic incentives to not use chipsets from a competitor. For example, Qualcomm offered a cell phone manufacturer one million free UMTS chipsets, a benefit worth tens of millions of dollars, as part of its attempts to foreclose competition.



*(d) Abuse of CDMA Monopolies to Undermine UMTS Competition*

17. Already using its monopoly power over chipsets using the 2G and 3G CDMA standards, Qualcomm has engaged in multiple forms of anticompetitive conduct – all violating its FRAND commitments in CDMA – with regard to its handset manufacturer licensees and customers. For example, Qualcomm has:

- Threatened to cut supplies of Qualcomm chipsets to licensees who purchase CDMA chipsets from Qualcomm's competitors;
- Imposed exclusivity requirements on chipset customers;
- Linked product discounts and marketing incentives to customers' agreements not to use competitors' chipsets; and
- Coerced chipset customers and licensees, many of which are members of key standards setting bodies, to support Qualcomm's manipulation of CDMA standards and impede competitors' CDMA innovations.

18. Qualcomm's cell phone manufacturer customers fear retribution from Qualcomm if they use any significant quantity of chipsets from a Qualcomm competitor. Retribution by Qualcomm is an effective threat not only because Qualcomm has monopoly power over chipsets on which customers depend, but also because of the competitiveness of the CDMA cell phone manufacturing industry: loss of price preferences, discounts, marketing incentives, or timely supply of Qualcomm chipsets can cripple a cell phone manufacturer's ability to compete. Qualcomm has threatened its cell phone manufacturer customers with *all* of these punishments to avoid competition on the merits.

19. Most of the manufacturers of UMTS cell phones are the same companies subject to Qualcomm's monopoly power in the 2G and 3G CDMA markets. Qualcomm has repeatedly demonstrated its inclination to use discriminatory, anticompetitive means to acquire and maintain its monopoly power, both in CDMA and in WCDMA technology. It now threatens to

monopolize the UMTS chipset market, in which Broadcom would like to compete, using many of the same and other unlawful practices.

20. Among other things, Qualcomm's conduct with respect to CDMA has:

- Preserved monopoly pricing for CDMA chipsets and stunted price competition at both the cell phone and carrier level, causing consumers to pay more for cell phones than they would if there were free and vigorous competition;
- Caused output of CDMA chipsets to remain below the levels that would exist in a competitive market;
- Inhibited innovation and product development in CDMA cell phones and chipsets, thereby reducing consumer product choice and quality; and
- Coerced standards setting body members to delay and undermine the adoption of innovative CDMA technologies developed by would-be competitors, and instead to adopt the products being developed by Qualcomm, thereby solidifying Qualcomm's CDMA market dominance and depriving consumers of the benefits of timely adoption of innovative technologies.

21. Left unchecked, Qualcomm's conduct will have the same or similar effects in the UMTS chipset market. Unless Qualcomm's misconduct is remedied, there is a dangerous probability that Qualcomm will exclude Broadcom and others from the UMTS chipset market and obtain monopoly power. This conduct will harm competition in the UMTS chipset market.

***Qualcomm's Anticompetitive Acquisition of Flarion***

22. Qualcomm now seeks to extend its monopoly power into the next generations of wireless standards, as it has already done with regard to previous generations, through acquisition of Flarion Technologies, based in South Bedminster, New Jersey, for up to \$805 million. As described by Qualcomm, Flarion is "a pioneer and leading developer" of OFDM/OFDMA technologies, and "the inventor of FLASH-OFDM® technology for mobile broadband Internet protocol (IP) services."

23. OFDM/OFDMA technologies are widely expected to be a foundation of the next generations of mobile wireless technology and standards, often referred to in the industry as

Beyond Third Generation (“B3G”) and Fourth Generation (“4G”) standards, and Flarion has emphasized precisely the areas of OFDM/OFDMA development – use in mobile applications and operation on Internet Protocol-based networks – that are likely to be significant for B3G and 4G standards. Indeed, Flarion has the only market-tested OFDM/OFDMA product currently available for use as the centerpiece of mobile wireless networks. Absent the acquisition, Flarion and its technologies present a fundamental competitive challenge to Qualcomm’s CDMA – as well as Qualcomm’s own OFDM/OFDMA – technology for B3G and 4G standards.

24. Qualcomm has asserted that the combination of the two companies will have the “industry leading” intellectual property portfolio for OFDMA for wireless applications, and control key patents for technology implementing, among other things, OFDMA/OFDMA and the emerging mobile “WiMAX” standard. In each respect, the combination is likely to significantly reduce competition and provide Qualcomm a means to extend its monopoly power into the next generations of wireless standards.

## II.

### JURISDICTION, VENUE AND COMMERCE

25. The Court has jurisdiction over this action pursuant to Section 4 of the Sherman Act, 15 U.S.C. § 4, and 28 U.S.C. §§ 1331, 1337.

26. The Court has supplemental jurisdiction over the state law claims asserted in this action pursuant to 28 U.S.C. § 1367. The federal and state law claims asserted in this action arise from a common nucleus of operative facts.

27. Qualcomm’s anticompetitive conduct with respect to UMTS chipsets and its “essential” WCDMA patents has affected and is affecting a substantial volume of interstate and foreign commerce, including commerce in this District. Qualcomm’s planned acquisition of Flarion,

which is based in South Bedminster, New Jersey, would also affect a substantial volume of interstate and foreign commerce, including commerce in this District.

28. Venue is proper in this District under Section 12 of the Clayton Act, 15 U.S.C. § 22, and under 28 U.S.C. § 1391. Defendant Qualcomm transacts and is registered to do business in, resides in, and is found within this District, and proposes to acquire Flarion, which is based in South Bedminster, New Jersey. Qualcomm has also appointed an agent for service of process in New Jersey. In addition, Plaintiff Broadcom operates a significant facility in New Jersey, which is an important part of Broadcom's UMTS chipset business.

29. New Jersey is a center for other key players in the wireless industry. LG Electronics ("LGE") and Motorola, Inc. ("Motorola") – two of the three largest manufacturers of UMTS-based cell phones – have substantial business operations in this District. Qualcomm has stated publicly that LGE and Motorola are "major customers." LGE's North American headquarters is located in Englewood Cliffs, New Jersey, and Motorola has substantial operations in New Jersey, including facilities in South Plainfield, Glen Rock and Piscataway. Matsushita Electric Industrial Co., Ltd., another leading manufacturer of UMTS-based cell phones using the Panasonic brand name, has its principal North American subsidiary (Panasonic Corporation of North America) headquartered in Secaucus, New Jersey. In addition, Verizon Wireless, the nation's largest CDMA carrier, is headquartered in Bedminster, New Jersey.

30. Moreover, numerous other businesses and persons affected by this action are located within this District. Millions of New Jersey consumers who have purchased or will purchase UMTS cell phones have been or will be injured by the higher prices, slower innovation, and reduced choices that have resulted and will result from Qualcomm's anticompetitive conduct.

### III.

#### THE PARTIES

31. Plaintiff Broadcom is a supplier of semiconductors for wired and wireless broadband communications. Broadcom's products provide innovative solutions in a variety of areas, including digital cable, satellite and Internet set-top boxes, high-definition televisions, digital subscriber line modems, home and wireless networking, and cellular and terrestrial wireless communications. Broadcom has an extensive history of innovation in the area of semiconductors used for broadband communications. Broadcom has made substantial investments, including the acquisition of Zyray Wireless in 2004 for approximately \$96 million in stock, to develop advanced, competitive UMTS chipsets, which by definition must include WCDMA capability.

32. Defendant Qualcomm has offices around the United States and the world, and operates several independent business units. Among others, Qualcomm licenses its intellectual property rights through a business unit called the "Technology Licensing Segment," or "QTL."

Qualcomm sells chipsets through a business unit called the CDMA Technologies Segment, or "QCT."

33. Qualcomm's QCT and QTL units are and have been extremely profitable. For example, in March 2005, Qualcomm summarized QCT and QTL revenue and profitability for fiscal year 2004 as follows:

**QUALCOMM CHIPSET AND LICENSING FINANCIALS, FISCAL YEAR 2004**

	<b>QCT (CHIPSET SALES)</b>	<b>QTL (TECHNOLOGY LICENSING)</b>
<b>REVENUES</b>	\$3.111 billion	\$1.331 billion
<b>REVENUES AS % OF QUALCOMM TOTAL</b>	64%	27%
<b>EARNINGS BEFORE TAXES</b>	\$1.049 billion	\$1.195 billion
<b>EARNINGS AS % OF UNIT REVENUES</b>	34%	90%

**IV.****THE STRUCTURE OF THE WIRELESS INDUSTRY****A. WIRELESS CARRIERS, CELL PHONE MANUFACTURERS, AND CHIPSET MANUFACTURERS**

34. Wireless carriers provide cell phone service to consumers. Carriers operate the wireless systems that enable consumers to place and receive telephone calls, and send and receive data, on cell phones. Leading wireless carriers in the United States include Cingular Wireless LLC, T-Mobile USA, Inc., Verizon Wireless, and Sprint Corp.

35. A number of companies around the world manufacture cell phones, and the manufacturers typically sell those phones to the carriers, which in turn arrange for sale of the phones to consumers. Cell phone manufacturers include Original Equipment Manufacturers (“OEMs”), which manufacture cell phones under their own names, as well as Original Design Manufacturers (“ODMs”), which manufacture cell phones for sale under an OEM’s brand name, usually based on a design created by the OEM. Motorola and LGE are two leading cell phone OEMs.

36. Cell phones contain, among other components, one or more computer chipsets that deliver the cell phones' core ability to communicate with the wireless system. These chipsets are sometimes referred to as Application-Specific Integrated Circuits, or "ASICs." Various firms in the industry develop and manufacture these chipsets.

**B. THE ROLE OF STANDARDS DEVELOPMENT ORGANIZATIONS**

37. For a carrier's wireless system to function properly, all of the system's components (*e.g.*, base stations in various geographic locations and consumers' cell phones) must seamlessly interface with each other. This means that regardless of which manufacturer makes a cell phone, regardless of which chipset manufacturer supplies the components for the cell phone, and regardless of which company manufactures the system's components, each cell phone must be capable of interfacing with all of the other components in a carrier's wireless system.

38. Because of this demand for interoperability, several standards development organizations ("SDOs") have worked with the wireless industry to develop wireless communications standards.

39. On a worldwide basis, the International Telecommunications Union ("ITU") is the central telecommunications SDO. The ITU is an international organization comprised of governments and firms in the private sector which coordinates the operation of telecommunications systems and services and advances the development of communications technology. The ITU's standardization activities are designed to foster the growth of new technologies, such as mobile telephony and the Internet, as well as the emerging global information infrastructure which handles a mix of voice, data and multimedia signals. The ITU develops internationally agreed technical and operating standards to foster interconnection of the world's communications systems.



40. The Telecommunications Industry Association (“TIA”) is the leading U.S.-based SDO for the communications and information technology industry. The TIA is comprised of member companies that manufacture or supply products and services used in global communications. The European Telecommunications Standards Institution (“ETSI”) is an SDO based in France with a leadership role in Europe. The Alliance of Telecommunications Industry Solutions (“ATIS”) is an SDO based in the United States.

41. In the past several years, standards bodies specific to wireless technology standards have developed. The Third Generation Partnership Project (“3GPP”) has focused on the evolution of GSM and UMTS technology, and the Third Generation Partnership Project 2 (“3GPP2”) has focused on the evolution of CDMA technology.

42. The ownership of relevant intellectual property (“IP”) and related IP licensing practices are critical issues in SDOs’ consideration of standards proposals. If the implementation of a standard requires the use of particular IP, such as a patent, the IP owner may have the ability to prevent, delay or distort the development of technology implementing that standard and thereby undermine the purpose of the SDO. Accordingly, SDOs typically require that their members declare whether they believe they hold patents necessary for compliance with a particular standard, and if so whether they are willing to license such patents on fair, reasonable, and non-discriminatory (“FRAND”) terms. Patents necessary to implement a particular standard are known as “essential patents” for the standard to which they relate. Each SDO relevant to this action requires that owners of essential patents agree to FRAND licensing before the SDO will agree to include the technology that depends upon those patents in any industry standard.

**C. THE DEVELOPMENT OF GENERATIONS OF CELL PHONE TECHNOLOGY**

43. Cell phones have developed through several “generations” in response to demand for wireless systems that carry data at faster rates and voice traffic at higher capacity. Wireless carriers have been increasingly focused on providing wireless data services through mobile phones, including wireless access to the Internet, multimedia entertainment, broadcast television and position location services. The earliest wireless systems, which included analog technology with voice transmission only, are typically referred to as first generation or “1G.” While first generation technology dramatically expanded adoption of wireless telecommunications, the technology was characterized by inherent capacity limitations, minimal data transfer capabilities, low security, inconsistent service levels, and significant power consumption.

44. The limitations of analog technology drove the development of a second generation of digital-based technologies, which are the primary technology standards in use today. Second generation, or “2G,” digital technology provided significantly enhanced efficiency through greatly increased voice capacity compared to analog systems. Second generation technologies also enabled wireless carriers to begin to offer numerous enhanced services, including paging, e-mail connections to computer networks, greater privacy, and greater fraud protection.

45. The leading 2G cell phone technologies are based on GSM and CDMA technologies. In the United States, Cingular Wireless and T-Mobile (among others) use GSM networks, while Verizon Wireless and Sprint (among others) use CDMA networks. The technologies are incompatible; a GSM phone will not work on a CDMA network and vice versa.

46. The 2G standards have been supplemented by evolutionary improvements and advancements that permit greater data rates and increased voice capacity. Many GSM carriers have adopted or are adopting technologies known as GSM Packet Radio Service (“GPRS”) and

Enhanced Data Rates for GSM Evolution (“EDGE”), which are sometimes referred to as “2.5G” technologies. Similarly, CDMA carriers have moved from a 2G standard called “cdmaOne,” to a newer IS-2000 standard, referred to as CDMA2000, the first iteration of which is another “2.5G” technology. As with the basic 2G standards, the 2.5G variants of GSM and CDMA technologies are incompatible with one another.

47. As demand for wireless systems that carry both data at faster speeds and voice at higher capacity has increased significantly, third generation or “3G” wireless standards have been proposed and adopted by international SDO. A technology standard selected for 3G must efficiently support significantly increased data speeds and capacity over limited spectrum bandwidth, thereby enabling new and enhanced services and applications such as mobile e-commerce, broadcast television, position location, and mobile multimedia web browsing, including music and video downloads.

48. The UMTS standard was designed to permit economical transition from 2G GSM-based systems to a 3G standard, and is the logical evolutionary step for GSM carriers. The UMTS standard permits a dual-mode approach incorporating both the GSM family of standards (including GPRS and EDGE) as well as a set of WCDMA 3G standards. Despite the similarity in name, cell phones designed for WCDMA operation under the UMTS standards are not compatible with any of the CDMA standards, regardless of generation, and the 3G standard for CDMA networks is entirely separate from either UMTS or WCDMA. For example, Verizon Wireless is in the process of transitioning from 2.5G CDMA (embodied in a variant of CDMA2000 known as CDMA2000-1xRTT) to 3G CDMA (in the form of a standard known as CDMA2000-1xEVDO).

49. The transition from 2G and 2.5G to 3G systems, which is only now beginning in some countries, is requiring and will require carriers to make substantial investments. It is anticipated that UMTS and 3G CDMA will be the significant 3G standards, with 3G CDMA anticipated as the upgrade path for current 2G CDMA carriers and UMTS anticipated as the upgrade path for current carriers of GSM and related technologies.

50. Cell phone technology will continue to develop during and after the move to 3G technology. Driven by demand for an increasing number of wireless applications and improved quality of existing applications, carriers wish to offer newer technologies that provide ever-increasing bandwidth supporting more advanced applications. The industry has already undertaken substantial development of technologies that may be implemented in B3G and 4G mobile wireless systems. SDOs working in the wireless area, including 3GPP and 3GPP2, have already begun work establishing B3G standards.

51. While the B3G standards are not yet fully developed, it is clear that Qualcomm-owned and Flarion-owned technologies will be leading contenders for adoption in B3G mobile wireless systems, and for 4G systems after that. For example, Flarion's FLASH-OFDM technology has been a leading contender to be integrated into the IEEE 802.20 standard, which in turn could be a basis for B3G and 4G wireless systems. Qualcomm, on the other hand, has pushed CDMA-based technologies, such as multi-carrier CDMA, for future systems; started OFDM/OFDMA development of its own; and (as described below) successfully sought to grind the development of the IEEE 802.20 standard to an effective halt, thereby undermining a competitive threat to Qualcomm's dominance. Despite Qualcomm's substantial investment in Flarion to obtain OFDM/OFDMA technologies and intellectual property, as well as Qualcomm's investment in developing its own competing OFDM/OFDMA technology, Qualcomm still trumpets that it

believes “CDMA technology will continue to offer the most advanced, spectrally efficient wide area wireless mobile networks for the foreseeable future.”

52. Qualcomm claims to hold patents essential to CDMA and WCDMA wireless telecommunications standards that have been adopted or proposed for adoption by SDOs worldwide. Qualcomm also claims that its combination with Flarion will result in the combined company’s possession of patents essential to the leading OFDMA solutions, which are contending to be B3G and 4G standards. In short, controlling Flarion provides a means for Qualcomm to project its monopoly position and power into future generations of mobile wireless technology.

#### **D. THE CHIPSET MARKETS**

53. Each type of wireless system (*e.g.*, GSM, 2G CDMA, 2.5G CDMA, 3G CDMA, and UMTS) has unique features and technology, and thus neither the systems, nor the phones used for each system, are interchangeable or substitutes. For a wireless service carrier to develop any one of these systems requires billions of dollars of investments in infrastructure. Thus, once a carrier’s initial decision to install a system has been made, the sunk investment in that system, and the costs that would be incurred to establish a different system, make it virtually impossible to switch to a different technology.

54. At this point few, if any, new wireless networks will be built from scratch. Even for new networks, limited and costly information has prevented carriers from taking into full account the long-term costs of operating a network, including the costs of chipsets for cell phones. As the Chairman and CEO of Qualcomm stated in 2000: “If you look at cdmaOne operators, it’s certainly more economical to go to cdma2000 because of the way the system is designed.” By making the transition to the next generation of the technology that a carrier has already selected –

whether CDMA or GSM for 2G services – the carrier can follow a relatively lower cost evolutionary path compared to the generally insurmountable expense entailed in switching between technologies.

55. At the same time, only phones with the appropriate technology will work on a particular wireless system. Similarly, the chipsets that operate cell phones must conform to the technology of the system for which the phone is being manufactured. Only 3G CDMA chipsets can be used in a 3G CDMA phone; only GSM chipsets can be used on a GSM phone; and only UMTS chipsets can be used on a UMTS phone. None of the chipsets are either interchangeable with, or substitutes for, each other.

56. While the investment in upgrading from one generation of CDMA to another is somewhat less than the investment and time required to switch from one technology (such as CDMA) to another (such as GSM), distinct demand and different pricing for each generation of chipsets makes it appropriate to define separate product markets for each chipset generation. As used herein, “CDMA chipset markets” means the markets for the sale of the chipsets that provide the core communications functions for each generation of CDMA-based cell phones. The geographic scope of each of the CDMA chipset markets is worldwide.

57. Similarly, UMTS chipsets are in a separate product market from the chipsets for GSM, CDMA and other cellular phone technologies. The geographic scope of the market for UMTS chipsets is worldwide.

#### **E. THE TECHNOLOGY MARKETS**

58. Once an SDO adopts a technology for a particular standard, the owner of each essential patent family used in that technology obtains a monopoly in the particular functionalities provided by its patent family to the standard. As such, by definition, there are no substitutes for

the standardized technology on which the family of patents read; that standard cannot be practiced without using technology based on the essential patents.

59. The technology on which on each essential patent reads for the UMTS standard issued in the United States constitutes a relevant product market, collectively referred to as the WCDMA technology markets. Similarly, the technology reading on each essential patent for the 2G CDMA standard, 2.5G CDMA standard, and 3G CDMA standard also constitutes a relevant product market, referred to as the 2G, 2.5G, and 3G CDMA technology markets, respectively.

60. Technologies are currently competing for adoption as part of B3G standards, and will compete for adoption as part of 4G standards. The technologies contending to serve essential functions for B3G wireless standards and systems constitute a relevant product market, described as the B3G technology market. Likewise, the technologies contending to serve essential functions for 4G wireless standards and systems constitute a relevant product market, described as the 4G technology market.

## V.

### **QUALCOMM'S SUCCESSFUL MONOPOLIZATION OF THE CDMA CHIPSET MARKETS**

61. Through a variety of anticompetitive means, Qualcomm has dominated the CDMA chipset markets, excluding virtually all competitors. This conduct both has paved the way for Qualcomm's attempt to monopolize the UMTS chipset market by giving Qualcomm power over manufacturers of UMTS cell phones (most of which also produce CDMA cell phones) and demonstrates how Qualcomm will accomplish the same result in UMTS.



**A. QUALCOMM HAS OBTAINED AND MAINTAINED MONOPOLY POWER IN THE CDMA CHIPSET MARKETS**

62. By its own statements, Qualcomm holds more than 1400 patents relating to CDMA technology and components, including the majority of the patents declared “essential” for CDMA systems, cell phones and chipsets. According to Qualcomm, the CDMA standards and the UMTS standard cannot be practiced without using Qualcomm technology based on its patents, issued in the United States and elsewhere. As such, and based on Qualcomm’s own representation, there are no substitutes for the technology and thus Qualcomm holds monopoly power in each of the markets for CDMA technology.

63. Qualcomm has used that power over CDMA technology to obtain and protect monopoly power in the CDMA chipset markets. According to Qualcomm’s public statements, through fiscal year 2005, Qualcomm had shipped more than 400 million of its CDMA chipsets worldwide. Qualcomm sells approximately 90% of each generation of the world’s CDMA chipsets.

64. Industry analysts also place Qualcomm’s market share in the CDMA chipset markets at 90% or more. For example, market research firm iSuppli Corporation reported that in 2003, the latest year for which iSuppli has released data, Qualcomm’s CDMA chipset revenues were approximately \$1.7 billion out of a total of \$1.87 billion for the industry.

65. Qualcomm’s monopoly power in the sale of CDMA chipsets has allowed it to raise prices and restrict output. Qualcomm has charged extremely high prices – on the order of double the price of GSM chipsets – that are not justified by production costs, by product functionality, or by quality. Both Qualcomm’s own public statements and reports from industry analysts and media demonstrate that the supply of CDMA chipsets is below levels that would exist in a competitive

market. Indeed, over time Qualcomm has recurrently noted capacity and supply shortages, in each instance suggesting that the problems would be solved in short order. For example:

- In its January 26, 2001 10-Q filing with the SEC, Qualcomm stated that “[t]he Company anticipates shipments in the second quarter of fiscal 2001 to be constrained by a capacity limitation at one of its suppliers. The Company expects the supply constraint to be substantially resolved by the third quarter of fiscal 2001.”
- On April 8, 2002, a trade publication reported that “[i]ndustry analysts have predicted that a shortage of devices would slow the uptake of next-generation services, even as wireless operators began to upgrade their networks on the CDMA2000 or W-CDMA migration paths to third-generation capabilities. San Diego-based Qualcomm, which owns patents for all CDMA device and network technology, said it corrected the problem and is ‘shipping large production volumes’ of 1X chipsets worldwide.”
- On July 23, 2003, Qualcomm’s Executive Vice President stated that “[a]t this time we believe carry [sic] inventories are largely in line with what CDMA carriers consider normal inventory, and in India shipments were recently being expedited to avert shortages.”
- In a news report dated January 22, 2004, Qualcomm’s Chief Operating Officer was quoted as saying: “In India, for instance, they’re complaining that they couldn’t get phones and they could’ve grown faster. I certainly don’t expect to see shortages for very long.”
- On April 22, 2004, Qualcomm’s President was quoted as describing the chipset shortage situation as “very much a supply limited market” and stating that a wireless carrier had been “constrained by the number of phones they can get.”
- On May 13, 2004, Qualcomm’s Executive Vice President stated on an investor teleconference that, “As you know we’ve had some shortages in meeting specific 51 and 5500 chipset demand.” The same representative stated that, “There will be some shortage in one or two parts going forward but very small shortages we expect. So we will have a future strategy, which is in much better alignment.”
- In its July 23, 2004 10-Q filing, Qualcomm stated that its chipset business “continued to experience supply constraints which resulted in our inability to meet certain customer demands” and that “we expect recent channel inventory shortages of integrated circuits to be alleviated in the future.”
- On October 21, 2004, the Reuters news service reported that, according to Qualcomm’s Chief Financial Officer William Keitel, “Qualcomm has resolved most of its supply issues, but is still producing some chips used for transmitting and receiving calls to mobile phones too slowly. ‘We’ll have it resolved by the end of the first calendar quarter,’ Keitel said in an interview with Reuters. ‘Our window on when we expect to be back in balance has been moving out because demand has continued to increase.’ . . .

Keitel said the shortage relates to radio chips in Qualcomm's 6000 series product range but did not name specific products.”

As these statements illustrate, Qualcomm has repeatedly demonstrated that it possesses the power to control the output of CDMA chipsets.

66. Qualcomm’s monopoly position is protected by high barriers to entry. Qualcomm has admitted that “a company seeking to develop, manufacture and/or sell products that use CDMA technology will require a license” from it, and regularly states that it is “widely recognized” that its intellectual property is “essential for the development, manufacture and sale of products implementing” CDMA. The technical complexity and Qualcomm’s control of essential patents make potential entrants dependent on Qualcomm for entry into the CDMA chipset markets.

67. Entry into the CDMA chipset business has been limited. Only a few firms – such as Texas Instruments Incorporated, PrairieComm Incorporated, VIA Telecom, Inc., Eonex Technologies, Inc., and (for its own internal use) Samsung Electronics – have entered the CDMA chipset business, and these firms have not achieved commercial success on any significant scale. Intel Corporation, a leader in semiconductor manufacturing and technology with substantial assets, attempted to develop a CDMA chipset business, but exited when it failed to achieve commercial success.

68. The paucity of entrants in the sale of CDMA chipsets stands in sharp contrast to the number of entrants in the many markets for other semiconductor chip products that are intensely competitive and subject to rapid technological change and pricing pressures.

**B. QUALCOMM HAS OBTAINED AND PROTECTED ITS MONOPOLY POWER WITH A PATTERN OF ANTICOMPETITIVE CONDUCT**

69. Qualcomm’s CDMA monopolies are not the result of superior business acumen or simple good fortune. Rather, Qualcomm’s durable monopoly position in the CDMA markets has resulted from a continuing course of exclusionary, anticompetitive conduct.

70. For example, Qualcomm has used its power over CDMA chipset supply to discipline customers and exclude competitors. As discussed above, Qualcomm's CDMA chipset customers (cell phone manufacturers) have frequently complained, and Qualcomm has repeatedly admitted in public statements, that the supply of Qualcomm's chipsets has not kept pace with demand.

71. The constant threat of a supply shortage increases Qualcomm's leverage with manufacturers because Qualcomm's anticompetitive use of its monopoly has resulted in the virtual exclusion of all competitors. As explained in a report from the industry news source Telecom Asia:

These companies have had to live with the shortages since Qualcomm is the only CDMA chipset supplier in Korea, although it subcontracts manufacturing to IBM and two Taiwanese companies. Many firms hesitate to complain as they're concerned about disruptions in their already reduced orders.

72. Competition among cell phone manufacturers is fierce. Absent adequate supplies of chipsets, a manufacturer may be unable to meet critical obligations to deliver cell phones to carrier customers. Accordingly, the allocation of scarce chipsets, particularly at high-demand times such as during manufacturing for the Christmas shopping season, is vital to cell phone manufacturers. Qualcomm has frequently used distribution of limited supplies of chipsets to favor certain customers. For example, in early 2004, news reports explained that Korean cell phone manufacturers were suffering from a CDMA chipset shortage, and that Qualcomm was only providing only 70 to 80 percent of the chipsets that certain customers had ordered, and other customers were receiving only half of the chipsets they had ordered.

73. Qualcomm wields its power over the allocation of scarce chipsets as a tool to threaten and discipline cell phone manufacturers who otherwise would do business with competitors. For example, Qualcomm has threatened manufacturers with the loss of important benefits such as favorable lead times, free reference designs and other design work, training, and software, if

these manufacturers purchase chipsets from a competitor. Similarly, as discussed below, Qualcomm has threatened manufacturers with supply cutbacks or price increases if these manufacturers support innovations that Qualcomm does not favor. As one example of the fear that Qualcomm's conduct has engendered, a representative of a Korean handset manufacturer was anonymously quoted in the Korea Times as saying, "A bigger problem is nobody can file a complaint to Qualcomm. Who would like to run the risk of being excluded from the customer list of Qualcomm, the monopolistic player?"

74. As another example of Qualcomm's anticompetitive conduct, in at least some manufacturer licenses Qualcomm substantially reduces royalty rates when a licensee agrees to purchase Qualcomm chipsets exclusively. As Qualcomm has admitted, its patent licensing agreements with Chinese cell phone manufacturers are expressly discriminatory and explicitly linked to those manufacturers' use of Qualcomm chipsets. First, if the Chinese manufacturers use non-Qualcomm chipsets, they must pay Qualcomm over twice the royalty that they would pay if they used Qualcomm chipsets. In addition, these agreements provide that the royalty rate is dependent on whether the cell phone is sold inside or outside of China. If a cell phone is sold outside China, the manufacturer is subject to a significantly higher royalty rate. To get the lower rate within China, the Chinese manufacturer must agree not to deal with a competitor. As Qualcomm has publicly summarized:

The royalty rates provided to certain Chinese manufacturers for products manufactured and sold in China for use in China are more favorable than our standard rates. However, in order to benefit from these more favorable rates in China, the Chinese manufacturer must provide substantial, additional value to QUALCOMM, including, among other things, (i) paying, for a period of time, a royalty on sales outside of China at a rate higher than our standard rate and (ii) *committing to use QUALCOMM's ASICs in their worldwide sales of CDMA subscriber units and infrastructure.* [emphasis added]

75. A third example of Qualcomm's anticompetitive conduct is its successful efforts to manipulate SDOs to ensure that the 3G CDMA standard has taken the form Qualcomm prefers, thereby preserving Qualcomm's CDMA chipset monopolies.

76. In the course of discussions within 3GPP2 about the path for 3G development of CDMA, Qualcomm advocated adoption of Qualcomm's preferred "High Data Rate (HDR)" technology, which later became known as CDMA2000-1xEVDO (or "Single Carrier Evolution, Data Only"). Qualcomm competitors supported a more flexible technology eventually known as CDMA2000-1xEVDV (or "Single Carrier Evolution, Data and Voice") ("EVDV"), that provides both voice and data signals over a single carrier frequency. Qualcomm undertook a course of conduct designed to cause 3GPP2 to adopt the EVDO standard that Qualcomm preferred, and to stall the development and adoption of EVDV. In doing so, Qualcomm intended to protect its technological and market lead in EVDO technology, and to avoid competition on the merits between EVDO and the more advanced EVDV.

77. The membership of 3GPP2 (as well as other SDOs relevant to this action) includes not only owners of patents relevant to prospective standards and prospective manufacturers of the cell phones implementing new standards, but also the manufacturer customers for chipsets. For all the reasons and as illustrated above, Qualcomm's dominant position in current CDMA chipset sales, as well as its control over vital inputs for CDMA chipsets and cell phones, gives it tremendous leverage over many such members of 3GPP2. In part through the use of this leverage, Qualcomm was able to delay the standardization of EVDV, enabling Qualcomm's EVDO technology to maintain Qualcomm's CDMA chipset dominance.

78. Among other things, Qualcomm delayed and distorted the standards competition between EVDO and EVDV by using Qualcomm's power over cell phone manufacturers and others to



induce them to withhold or withdraw support from technical proposals embracing EVDV (or the technology from which EVDV evolved). Qualcomm threatened 3GPP2 members with CDMA chipset price increases or supply cutbacks so that the members would support Qualcomm's desired outcomes. Qualcomm's threats, which were effective because of manufacturers' overriding concerns with short-term competition with other cell phone manufacturers, had their intended effect: manufacturer members that supported alternative technologies abruptly changed their positions. In addition, Qualcomm promoted a detailed testing and measurement methodology for EVDV which Qualcomm represented would take six months to complete but, due to Qualcomm's delaying tactics, lasted over two years.

79. After the EVDV standard was finally approved, Qualcomm continued its attempt to delay and thwart the development of that standard to maintain its CDMA chipset dominance. For example, Qualcomm withheld supplies of CDMA chipsets from at least one customer in an attempt to induce the customer to abandon the EVDV standard.

80. In February 2005, Qualcomm declared victory in its campaign to delay and kill EVDV by announcing that Qualcomm was excluding EVDV chipsets from its future product plans. Qualcomm cited a lack of industry support for EVDV, for which Qualcomm's unlawful conduct was responsible.

## VI.

### **QUALCOMM IS REPEATING ITS PATTERN OF ANTICOMPETITIVE CONDUCT TO MONOPOLIZE THE WCDMA TECHNOLOGY MARKET AND ATTEMPT TO MONOPOLIZE THE UMTS CHIPSET MARKET**

81. Successful in its efforts to obtain and maintain its CDMA chipset monopolies, Qualcomm now has its eyes set on the UMTS chipset market. As set forth below, Qualcomm has unlawfully obtained a monopoly in WCDMA technology markets and, using a broad pattern of conduct,



including use of its monopoly power over cell phone manufacturers active in the CDMA standards and UMTS, Qualcomm has attempted to exclude and disadvantage competitors in order to obtain a monopoly in the UMTS chipset market.

**A. QUALCOMM’S UNLAWFUL MONOPOLIZATION OF THE WCDMA TECHNOLOGY MARKETS WITH FALSE PLEDGES TO LICENSE ITS ESSENTIAL WCDMA PATENTS ON “FRAND” TERMS**

82. Once a standard has been adopted that incorporates a patented technology, alternatives previously available can no longer be used. The adoption of the standard therefore confers monopoly power on the essential patent holders. Because the UMTS standard was adopted in reliance on Qualcomm’s false promise to license its “essential” patents on FRAND terms, Qualcomm’s patents are a barrier to entry into the relevant product market.

83. Qualcomm has publicly and repeatedly asserted that it controls essential patents needed to use WCDMA in wireless systems, and that without a license to Qualcomm’s patents, it would be impossible for a manufacturer to produce either cell phones or chipsets that use WCDMA technology.

84. As the UMTS standard was being developed, Qualcomm sought to have its intellectual property included in the standard. In order to secure the inclusion of the WCDMA technology to which Qualcomm purports to hold essential patents included in the UMTS standard, Qualcomm made repeated and express written representations to SDOs, including the ITU, ETSI, and 3GPP, that it would license any of its essential WCDMA patents on FRAND terms.

85. Qualcomm’s false commitments to FRAND were intended to, and did, secure widespread acceptance of WCDMA wireless standards, including standards that required use of Qualcomm’s “essential” WCDMA patents. In reliance on Qualcomm’s assurances, SDOs around the world adopted WCDMA standards, including into the UMTS standards, and wireless

service carriers in turn invested billions of dollars in building and improving wireless networks utilizing WCDMA technology. By definition, according to Qualcomm's statements, any business that implemented those WCDMA standards would infringe Qualcomm's patents unless it obtained a license, which Qualcomm had agreed to provide on FRAND terms. Thus, by Qualcomm's statements, it has monopoly power in relevant WCDMA technology markets.

86. As described in more detail below, Qualcomm repeatedly has breached its FRAND commitments to the SDOs. Qualcomm's licensing practices have been neither fair, nor reasonable, nor non-discriminatory. Qualcomm has engaged in a cumulative pattern of unlawful licensing and marketing practices to attempt to expand its CDMA chipset and WCDMA technology monopolies into the UMTS chipset market. These practices are wholly inconsistent with Qualcomm's commitments to SDOs that Qualcomm would license its intellectual property on FRAND terms. Cumulatively, these practices have, among other things, effectively foreclosed Broadcom's entry into the UMTS chipset market.

#### **B. QUALCOMM'S REFUSAL TO LICENSE ON FRAND TERMS**

87. Broadcom approached Qualcomm to obtain a license to Qualcomm's so-called essential WCDMA patents on the FRAND terms that Qualcomm had committed to provide. In willful disregard of the commitments it made to incorporate its technology into the UMTS standard, Qualcomm has refused to license any of its essential WCDMA patents on FRAND terms, and demanded of Broadcom terms that are unfair, discriminatory, and patently unreasonable.

88. Broadcom does not disclose the specifics of those terms here, because as part of Qualcomm's efforts to impose non-FRAND terms on licensees, Qualcomm insists that parties seeking to negotiate a license enter into non-disclosure agreements that prevent disclosure of certain information relating to the negotiations. Qualcomm has enforced such non-disclosure

agreements in an extremely aggressive manner, including bringing and widely publicizing a meritless lawsuit attempting to wholly strip a competitor of its license to manufacture CDMA and UMTS chipsets based on the competitor's alleged violations of a non-disclosure agreement. To the extent Qualcomm itself has not publicly disclosed its various licensing requirements, Qualcomm's NDA practices limit Broadcom's willingness and ability to describe in detail the unfair, discriminatory, and unreasonable terms to which Qualcomm has demanded Broadcom agree.

***(i) Demand for Royalties on Unpatented Components***

89. In contradiction of its FRAND commitments, Qualcomm seeks to collect royalties on parts of the UMTS chipset beyond Qualcomm's patented technology. Such a structure discriminates against manufacturers such as Broadcom that plan to provide enhanced functionality on their UMTS chipsets.

90. Qualcomm's insistence on collecting royalties on this basis is unreasonable, unnecessary, and anticompetitive in that it decreases the economic incentives of Qualcomm's licensees to innovate in ways that improve and add functionality to their UMTS chipsets. Both alone and in combination with Qualcomm's other anticompetitive conduct, it undermines UMTS innovation and competition.

***(ii) Demand for Non-Reciprocal Patent Rights***

91. Qualcomm also violates its FRAND obligations by requiring that its UMTS licensees grant back to Qualcomm licenses that are substantially broader than the licenses that Qualcomm will provide. This overly broad and asymmetrical grant-back requirement is discriminatory in that it affects licensees with extensive relevant patent portfolios (such as Broadcom) more than it affects those without such a portfolio. Furthermore, under its FRAND obligations, Qualcomm

may demand a grant-back only to the same set of rights that it licenses to the licensee; it may not insist on rights that are not reciprocal. Qualcomm's insistence on an asymmetrical grant-back has the additional anticompetitive effect of discouraging innovation by Qualcomm's licensee-competitors and thus, by itself and together with Qualcomm's other anticompetitive conduct, undermines competition for UMTS chipsets and technology.

***(iii) Demand to Collect Double Royalties***

92. Despite Qualcomm's FRAND commitments – unlike other owners of patents deemed essential to the CDMA or WCDMA standards – it also insists on licenses at both the component level and the cell phone level. Qualcomm charges some or all UMTS cell phone manufacturers a substantial royalty rate on the sales price of each cell phone sold, including the value of the UMTS chipset within the handset. In addition, Qualcomm charges some UMTS chipset manufacturers, and has insisted on charging, a substantial additional royalty on the sales price of each UMTS chipset sold.

93. Qualcomm enforces its double royalty by demanding that its chipset manufacturer licensees agree not to sell their UMTS chipsets to non-Qualcomm licensed cell phone manufacturers, as well as by prohibiting handset licensees from using chipsets manufactured and generally sold by unlicensed manufacturers. Qualcomm's royalty scheme enables it inappropriately to charge twice for the same licensing right.

94. UMTS cell phone manufacturers pay a royalty to Qualcomm for rights including the right to make (or have made) and use UMTS chipsets in UMTS cell phones to be sold by the licensee. Cell phone manufacturer licensees pay the same royalty rate per handset regardless of whether they make (or have made) their own customized UMTS chipsets or buy from a UMTS chipsets manufacturer that is licensed by Qualcomm. Thus, when a UMTS cell phone

manufacturer buys a UMTS chipset from a Qualcomm licensee, both the handset manufacturer and the chipset manufacturer are paying a royalty to Qualcomm for the right to make the chipset. The cell phone manufacturer does not receive a reduction in its royalty payment if it purchases chipsets from a Qualcomm-licensed chipset manufacturer (to reflect the “make” right royalty payment already collected) – even though it does receive such a reduction, as discussed below, if it purchase chipsets from Qualcomm itself. By reaping a double royalty for the same right and by charging this double royalty to some but not all licensees, Qualcomm has violated its FRAND obligations. As a cumulative consequence of this and Qualcomm’s other anticompetitive conduct, Qualcomm has undermined the ability of independent UMTS chipset manufacturers such as Broadcom to compete against Qualcomm in the UMTS chipset market.

95. In addition, by this practice Qualcomm effectively compels each customer to negotiate with Qualcomm for a separate license, even if that customer wants to purchase chipsets from a source other than Qualcomm. The division of license rights in this manner enables Qualcomm to control or influence the transaction between its chipset competitors and their manufacturer customers, and to discriminate between customers on the basis of whether they use Qualcomm or non-Qualcomm chipsets.

96. Qualcomm has threatened UMTS cell phone manufacturers with, among other things, potential termination of their licenses, breach of contract lawsuits, and/or patent infringement lawsuits if they purchase UMTS chipsets from any company that does not have its own license from Qualcomm, including Broadcom. Qualcomm has made these threats notwithstanding its knowledge that at least some of those cell phone manufacturers have paid a royalty on UMTS chipsets and are licensed to sell UMTS cell phones incorporating UMTS chipsets.

97. Other parties with patents they have declared as essential to implementing WCDMA, including Nokia, Ericsson, InterDigital, and Samsung, among others, do not charge such double royalties. Rather, these companies seek only one royalty.

98. Qualcomm's efforts to collect double royalties violate its FRAND obligations not only because they are unfair and unreasonable, but also because they impose different royalties overall (for the same rights) depending on whether the UMTS cell phone manufacturer uses third party UMTS chipsets or produces chipsets themselves. This and Qualcomm's other conduct have undermined competition for UMTS chipsets.

***(iv) Unreasonable Royalty Demands Contrary to FRAND Commitments***

99. Qualcomm's demands for unreasonable royalties are contrary to its obligation to license its WCDMA technology on FRAND terms. In addition to collecting a double royalty, as discussed above, the royalty rates charged by Qualcomm to UMTS chipset manufacturers for its WCDMA technology are far greater than the rates charged by any other company proclaiming to be an essential WCDMA patent holder. Qualcomm also has publicly represented that it is charging the same royalty rates for licensing its WCDMA technology as it charges for licenses to its 3G CDMA technology, despite the fact that its patents comprise a much smaller proportion of the UMTS standard than of the 3G CDMA technology standard. For example, at Qualcomm's May 5, 2005 Spring Analyst Meeting, Qualcomm President-elect Steve Altman stated that Qualcomm's licensees would be required to pay the same royalty rates regardless of whether any of its patents expire and regardless of the number or percentage of WCDMA essential patents held, provided that at least "one claim of one patent applies." Similarly, Qualcomm has rejected attempts by other WCDMA essential patent holders to set a government- or SDO-approved ceiling on the royalty rate at which all WCDMA technology for cell phones would be licensed in

order to encourage adoption and proliferation of the technology. Despite its commitments to various SDOs to license on FRAND terms, Qualcomm has never had any intention of applying a reasonable royalty rate.

100. In short, Qualcomm patents add far less value to the 3G UMTS standard than to the 3G CDMA standard, but Qualcomm charges the same license rate for both, which gives Qualcomm disproportionate ability to influence the cost of UMTS products.

101. The effect of Qualcomm's conduct is to maintain its monopoly in WCDMA technology markets, to monopolize the UMTS chipset market and to maintain its monopoly in the CDMA technology and chipset markets.

***(v) Demand for Anticompetitive Information Exchange***

102. Qualcomm has also insisted that it have the right to receive licensees' sensitive pricing information relating to UMTS chipsets, including information about sales where the licensee and Qualcomm were competing head-to-head. Such an anticompetitive information exchange would discourage price competition and lacks any legitimate business justification. The effect of this anticompetitive information exchange requirement, along with Qualcomm's other conduct, is to prevent competition to the detriment of both would-be competitors such as Broadcom and consumers.

**C. QUALCOMM'S DISCRIMINATORY LINKAGE OF ITS PATENT LICENSES TO PURCHASE OF ITS UMTS CHIPSETS**

103. In addition to Qualcomm's demands that Broadcom enter into these non-FRAND terms, Qualcomm has also imposed non-FRAND terms on *other* WCDMA licensees, just as it has in the CDMA markets, and used such terms to undermine competition from competitors like Broadcom.

***(i) Discrimination in WCDMA Patent Royalty Rates***



104. Qualcomm's patent licensing practices are designed to extend Qualcomm's monopoly position into the UMTS chipset market. In its licenses with cell phone manufacturers, Qualcomm has imposed discriminatory, onerous and unreasonable terms for the right to use Qualcomm's WCDMA patents. For example, Qualcomm has required manufacturer licensees to pay up-front multi-million dollar licensing fees, which it has occasionally waived, but *only* on a discriminatory basis – *i.e.*, if cell phone manufacturers agree to purchase Qualcomm chipsets exclusively – despite the fact that no legitimate relationship exists between licensing of cell phone technology and purchase of chipsets.

105. Qualcomm's royalty rate discrimination furthers no legitimate competitive interest or business need. Rather, Qualcomm's royalty rate discrimination, based on whether manufacturers use Qualcomm's chipsets, is intended to harm, and has the effect of harming, competition in the UMTS chipset market.

***(ii) Discrimination in WCDMA Patent Royalty Calculations: Price Netting***

106. Qualcomm has also engaged in "price netting," another discriminatory and anticompetitive licensing practice. Qualcomm typically charges each cell phone manufacturer licensee a royalty for Qualcomm's essential WCDMA patents based on the price of the entire cell phone, including the chipset, if the cell phone uses a chipset made by a competitor of Qualcomm. By contrast, Qualcomm permits cell phone manufacturers to deduct, or "net out," the price that they pay Qualcomm for a Qualcomm chipset from the price of the cell phone before calculating the royalty amount. This explicitly ties the patent royalty (that is, the price paid for intellectual property controlled by Qualcomm) to the purchase of the UMTS chipset, the product as to which Broadcom and others have sought to compete.

107. Qualcomm's price netting practices further no legitimate competitive interest or business need. Rather, these practices are intended to harm, and have the effect of harming, competition for the manufacture and sale of UMTS chipsets.

108. As a result of Qualcomm's royalty rate discrimination and price netting practices, each non-Qualcomm chipset that a cell phone manufacturer purchases carries with it a substantial price penalty. Price netting alone ensures that Broadcom would have to sell chipsets for less than Qualcomm's chipsets.

109. The combined use of price netting and other discriminatory terms in Qualcomm's manufacturer agreements – even putting aside Qualcomm's other anticompetitive practices, as detailed above and below – would put Broadcom at a significant disadvantage in pricing its UMTS chipsets to a cell phone manufacturer. Qualcomm's ability and its readiness to abuse its monopoly power over essential patents and other technology, combined with its other conduct, has made meaningful competition impossible.

#### **D. QUALCOMM'S ANTICOMPETITIVE EXCLUSIVITY PAYMENTS**

110. Qualcomm has also foreclosed competition for UMTS chipsets through the use of discounts, marketing incentives, and other rewards that are conditioned on use of Qualcomm UMTS chipsets. These incentives and concessions can amount to tens of millions of dollars for a single cell phone manufacturer licensee.

111. The discounts and inducements offered by Qualcomm in exchange for use of Qualcomm chipsets are designed to defeat competition that would expand UMTS chipset output, improve quality, and reduce the price of UMTS cell phones. Qualcomm's licensing practices, individually and collectively, substantially raise competitors' costs of selling and marketing UMTS chipsets, and strongly discourage chipset buyers from dealing with Qualcomm's

competitors. These practices have the purpose and the effect of protecting Qualcomm from competition on the merits by Broadcom and others.

**E. QUALCOMM'S CONDUCT PRESENTS A DANGEROUS PROBABILITY THAT IT WILL ACHIEVE MONOPOLY POWER IN THE UMTS CHIPSET MARKET**

112. Qualcomm's efforts to monopolize the UMTS chipset market come at a time when the market is in its relative infancy. Only limited UMTS systems are in place, but the UMTS chipset market is experiencing rapid growth. Qualcomm has stated that only approximately 3 million UMTS or WCDMA cell phones were sold in 2003, that 22 million were sold in 2004, and that that 50 million such phones will be sold in 2005.

113. Qualcomm has recently touted that by January 2005 it had already signed UMTS design deals for chipsets and systems software with 26 cell phone manufacturers, including three of the leading UMTS cell phone manufactures, LGE, Samsung, and Siemens, from which Qualcomm has stated it expects 77% sales growth, as well as six of the top seven Chinese manufacturers, from which Qualcomm has stated it expects 126% sales growth.

114. As a result of Qualcomm's anticompetitive conduct, Qualcomm's possession of monopoly power in the WCDMA technology markets, and Qualcomm's possession of monopoly power in the CDMA chipset and technology markets, there is a dangerous probability that Qualcomm will obtain monopoly power in the UMTS chipset market, just as it has done in the 2G, 2.5G, and 3G CDMA chipset markets.

**F. QUALCOMM'S CONDUCT EXPANDS ITS 3G CDMA CHIPSET AND TECHNOLOGY MONOPOLIES**

115. Qualcomm successfully obtained and has willfully maintained monopoly power in the markets for 3G CDMA chipsets and 3G CDMA technology. Given its monopoly power in 3G CDMA, Qualcomm has no incentive to curb its anticompetitive and unfair practices in the

WCDMA technology markets or UMTS chipset market. In fact, Qualcomm is a particularly dangerous monopolist because it has every incentive to discourage competitors from innovating and deter them from competing.

116. Further, Broadcom is being injured by Qualcomm's maintenance of its 3G CDMA monopolies because Qualcomm is doing so at the expense of WCDMA technology and UMTS chipsets, areas in which Broadcom is actively innovating.

## VII.

### **QUALCOMM'S ACQUISITION OF FLARION WILL SUBSTANTIALLY LESSEN COMPETITION IN THE B3G AND 4G TECHNOLOGY MARKETS**

117. On August 11, 2005, Qualcomm announced its planned acquisition of Flarion, describing Flarion as "a pioneer and leading developer" of OFDM/OFDMA technologies, and "the inventor of FLASH-OFDM® technology for mobile broadband Internet protocol (IP) services."

Qualcomm has announced that the acquisition will have a total value of as much as \$805 million. This is not Qualcomm's first acquisition. Rather, Qualcomm has undertaken numerous previous acquisitions, including ones which Qualcomm has used to cement its dominance in the markets for existing generations of wireless technologies and chipsets discussed above.

118. Qualcomm has repeatedly touted Flarion's intellectual property holdings, asserting that the combination of Qualcomm and Flarion will have the "industry leading" intellectual property portfolio for OFDMA for wireless applications, and control key patents for technology implementing, among other things, the emerging mobile "WiMAX" standard. Qualcomm's acquisition of Flarion is targeted primarily at acquiring Flarion's intellectual property, and Qualcomm's agreement to acquire Flarion specifically provides for substantial payments if even a portion of Flarion's outstanding patent applications are granted.

119. Flarion and its technologies present a fundamental competitive challenge to Qualcomm's technology for B3G and 4G standards. Although products using B3G technologies may not arrive in the marketplace for three or more years, the process of adopting industry standards for these technologies is well underway, with 4G technology standards expected to follow closely.

120. OFDM/OFDMA offers technical advantages for high-bandwidth applications. Accordingly, it is widely considered a leading contender for adoption as a B3G mobile wireless standard. So long as Qualcomm does not control necessary inputs for B3G and 4G technologies, the evolution to B3G and 4G presents the cell phone industry with the opportunity eventually to free itself from the costs and burdens of Qualcomm's anticompetitive practices in the CDMA and WCDMA technology markets and the CDMA and UMTS chipset markets.

121. Qualcomm's acquisition of Flarion is an effort by Qualcomm to cut off that escape route, just as Qualcomm has previously cut off escape routes in markets for 2G CDMA and 3G CDMA and UMTS/WCDMA markets. Flarion's technology has been the basis for the only fully operational OFDM/OFDMA-based commercial wireless broadband networks the world has ever seen. Flarion has emphasized precisely the areas of OFDM/OFDMA development – use in mobile applications and operation on Internet Protocol-based networks – that are likely to be significant for B3G and 4G standards. By Qualcomm's own statements, Flarion is a leader in applying OFDM/OFDMA technologies to mobile wireless applications, and a key holder of patents for wireless and Internet Protocol applications of OFDM/OFDMA.

122. Qualcomm also clearly perceives Flarion as a major source of competition for future standards. Whereas Flarion and others have sought the rapid standardization of Flarion's FLASH-OFDM and complementary technology in the IEEE standards development process for so called "802.20" technology, Qualcomm has repeatedly appeared in force at IEEE 802.20

standards meetings – including packing meetings with representatives and consultants who have done little more than vote in lockstep as indicated by a Qualcomm designee – to oppose and delay Flarion’s standardization efforts. While seeking to slow Flarion’s progress, Qualcomm has been developing OFDM/OFDMA technology and patents of its own, as well as continuing to work to develop and propagate CDMA and WCDMA technologies for use in future networks. Qualcomm’s proposed acquisition of Flarion would substantially lessen competition between all of these technologies.

123. Qualcomm also recognizes that the emerging standard known as IEEE 802.16e, the mobile application member of the WiMAX family of standards, is a potential source of B3G and 4G competition. Qualcomm has stated that Flarion’s “pioneering” work applies to the developing mobile WiMAX standard. Accordingly, Qualcomm’s acquisition of Flarion will position Qualcomm as the owner of essential patents and technology for yet another potential B3G and 4G standard.

124. Independent of each other, Qualcomm and Flarion can be expected to compete for the adoption of their respective technologies – including essential patents – for B3G and 4G standards. Combined, they are likely to significantly reduce competition and provide Qualcomm a means to extend its monopoly power into the next generations of wireless standards.

**A. QUALCOMM UNDERMINED FLARION’S EFFORTS TO ACHIEVE ADOPTION OF FLASH-OFDM AS AN INDUSTRY STANDARD**

125. The importance of Flarion as a competitor to Qualcomm and as a developer and supporter of technology competitive to Qualcomm’s technology is demonstrated by Qualcomm’s anticompetitive effort to undermine the adoption of Flarion’s technology prior to the proposed acquisition, as well as by Qualcomm’s acceleration of research and development efforts in response to Flarion’s success.

126. Flarion was a leader in persuading the IEEE standards development organization to pursue development of a new mobile wireless standard referred to as “802.20,” which was intended to serve as a potential basis for future B3G and 4G mobile wireless telephone systems. The goal of the IEEE’s 802.20 work was to create a standard for multi-vendor, broadband, Internet Protocol-based mobile wireless communications services. Flarion was central in forming the IEEE 802.20 working group and moving the 802.20 process forward, and the FLASH-OFDM technology was a leading contender for adoption, in whole or in part, in the developing standard.

127. The timely and effective emergence of an 802.20 standard posed a competitive threat to Qualcomm because it could provide the basis for a B3G or 4G standard that Qualcomm did not control. Thus, Qualcomm undertook to slow or stop the emergence of an effective 802.20 standard based on Flarion technology. Beginning nearly three years ago, Qualcomm flooded the 802.20 proceedings with its own employees and “consultants,” and proceeded to use its voting block to elect a Qualcomm representative as chairperson and ultimately grind the proceedings to an effective halt. As a result of Qualcomm’s conduct, the 802.20 committee has now fallen behind all of its stated timelines, and to date has not even reached the point of considering concrete technology proposals. As a result, some industry members have written off the 802.20 standard as unlikely to emerge in any relevant way. Qualcomm’s tactics at the 802.20 committee served no valid business purpose, and had the purpose and effect of slowing (if not preventing) the emergence of a potentially competitive technology.

128. The IEEE mobile wireless standard referred to as “802.16e” or “mobile WiMAX,” which uses OFDM/OFDMA technologies, is another leading contender for adoption as a B3G or 4G standard. According to Qualcomm, Flarion has “pioneering” work and patents that read on



WiMAX technology, and Qualcomm itself also holds patents relating to OFDM/OFDMA technologies. In reference to its acquisition of Flarion, Qualcomm indicated that it “believe[s] very strongly that these patents with this combination would apply to WiMAX as well as other OFDMA solutions.”

**B. QUALCOMM’S ACQUISITION OF FLARION AS A RESPONSE TO THE COMPETITIVE THREAT POSED BY FLARION AND WIMAX**

129. On August 11, 2005, Qualcomm announced it would acquire Flarion for approximately \$600 million in stock and cash, with additional incentives of up to approximately \$205 million in value.

130. As Qualcomm has repeatedly stated, obtaining Flarion’s intellectual property relating to OFDM/OFDMA is one of Qualcomm’s primary strategic goals in acquiring Flarion.

Qualcomm’s acquisition agreement was specifically structured to provide incentives for Flarion to successfully complete pending patent applications, requiring Qualcomm to pay \$75 million of additional value if just 20 of Flarion’s approximately 125 pending patent applications are granted. Moreover, as set out in the acquisition agreement, Qualcomm has identified or will identify 15 patent applications that, subsequent to the merger closing, Qualcomm will prosecute on Flarion’s behalf.

131. As noted above, Qualcomm has also repeatedly stated that with the Flarion acquisition, Qualcomm will have an industry leading OFDM/OFDMA intellectual property portfolio, with patents essential to the leading technologies vying for, or likely to vie for, adoption as B3G and 4G standards.

132. All of the leading candidates for adoption as a standard for B3G and 4G technologies are based either on CDMA, WCDMA or OFDM/OFDMA technologies. These technologies are

competing not only on their technological merits, but also based on expectations about licensing demands of essential intellectual property holders for each standard.

133. Qualcomm already asserts that a license to its intellectual property is necessary for any use of CDMA and WCDMA technologies in the mobile wireless arena. Accordingly, Qualcomm's acquisition of Flarion and its intellectual property substantially reduces, if not eliminates completely, the available B3G and 4G technology options to which Qualcomm does not claim essential intellectual property. Qualcomm's acquisition of Flarion thus will substantially reduce competition in the B3G and 4G technologies markets.

134. In addition, Qualcomm's acquisition of Flarion will remove Flarion as an independent competitor in the B3G and 4G technology markets. Flarion has unique experience in the development, application, commercialization, and market trial of OFDM/OFDMA technologies for mobile wireless and Internet Protocol-based uses. As an independent competitor, Flarion would continue to develop, market, and standardize technology that would compete with Qualcomm's CDMA-based technologies in the B3G and 4G technology markets. Qualcomm's acquisition of Flarion would immediately eliminate competition between Qualcomm and Flarion, and with it any further opportunities for carriers and consumers to obtain experience with independently-held Flarion technology, which could assist in the further adoption of such technology for B3G and 4G standards in competition with Qualcomm. As one analyst has described: "Owning the technology and talent behind Flarion will help [Qualcomm] keep an invaluable edge against any companies hoping to marginalize Qualcomm's dominant position in the future." Another likewise commented:

I think most of the benefits Qualcomm will derive from the Flarion deal are defensive in nature. One of the classic strategic advantages investors look for in companies is a technological or strategic moat that keeps

competition out. In Qualcomm's case, it places great importance in protecting its royalty stream.

135. If permitted to acquire Flarion, Qualcomm will be able to marginalize competition by eliminating OFDM/OFDMA as an independent threat to Qualcomm's CDMA and WCDMA monopolies and extending Qualcomm's dominance to OFDM/OFDMA and/or WiMAX technology. In either event, Qualcomm's acquisition of Flarion will substantially lessen competition and harm consumers of the next generations of mobile wireless technology.

**C. QUALCOMM'S ACQUISITION OF FLARION WILL INJURE BROADCOM**

136. As a leading manufacturer of semiconductors for wireless broadband applications, Broadcom has a strong interest in healthy competition among technologies in the B3G and 4G technology in at least two respects.

137. First, Broadcom is a customer in the B3G and 4G technology markets. As an equipment manufacturer, Broadcom may require a license to intellectual property necessary to manufacture B3G and 4G equipment. Reduced competition among B3G and 4G technologies, and particularly an increase in Qualcomm's market power in the markets for B3G and 4G technology, will reduce Broadcom's ability to obtain such technology licenses on competitive terms, or to obtain those licenses at all.

138. Second, Broadcom expects to be a competitor to Qualcomm in the chipset markets for B3G and 4G technologies. As detailed above, Qualcomm has already used its monopoly power in the WCDMA technology markets to undermine Broadcom as a competitor in the UMTS chipset markets. An increase in Qualcomm's market power in the B3G and 4G technology markets will enable Qualcomm to continue its unlawful conduct to undermine or exclude competitors like Broadcom from the markets for B3G and 4G chipsets.

**VIII.**

**CLAIMS FOR RELIEF**

**FIRST CLAIM FOR RELIEF**

**Monopolization of Markets for WCDMA Technology  
in Violation of Section 2 of the Sherman Act**

139. Plaintiff Broadcom repeats and realleges all of the allegations in all the paragraphs above as if set forth fully herein.

140. By such acts, practices, and conduct, Qualcomm has unlawfully monopolized the WCDMA technology markets by inducing the relevant SDOs to adopt 3G standards that incorporate Qualcomm's patents as an essential element, relying on Qualcomm's promise to observe FRAND licensing, and then not acting in accordance with those promises, all in violation of Section 2 of the Sherman Act, 15 U.S.C. § 2.

141. Qualcomm has likewise maintained that monopoly through its licensing and other practices described herein.

142. By reason of Qualcomm's violations of Section 2 of the Sherman Act, Broadcom has been injured in its business or property including through the loss of past, present and future profits, by the loss of customers and potential customers, by the loss of goodwill and product image, and by the prospective destruction of its UMTS chipset business.

143. Broadcom has suffered irreparable injury by reason of the acts, practices and conduct of Qualcomm alleged above, and will continue to suffer such injury until and unless the Court enjoins such acts, practices and conduct.

**SECOND CLAIM FOR RELIEF**  
**Attempted Monopolization of Market for UMTS Chipsets**  
**in Violation of Section 2 of the Sherman Act**

144. Plaintiff Broadcom repeats and realleges all of the allegations in all the paragraphs above as if set forth fully herein.

145. The global UMTS chipset market is a relevant antitrust market. Qualcomm has willfully engaged, and is illegally engaging, in a cumulative course of conduct, including without limitation: (i) refusing to abide by FRAND licensing commitments made to SDOs in the United States and other countries, after having induced those organizations to adopt technological standards necessitating the use of Qualcomm WCDMA patents that Qualcomm has described as essential; (ii) refusing to provide to Broadcom a license on FRAND terms to Qualcomm patents Qualcomm has stated are essential to UMTS chipsets and cell phones, and demanding that Broadcom agree to unfair, discriminatory, and patently unreasonable terms that are aimed to cripple Broadcom as a UMTS chipset competitor; (iii) providing discounts on the excessive royalties it charges wireless cell phone manufacturers and manufacturers for use of its patents only if the licensee purchases Qualcomm chipsets; (iv) providing cell phone manufacturers with multi-million dollar marketing funds and/or other incentives, conditioned on the use of Qualcomm's UMTS chipsets; (v) waiving upfront licensing fees for its intellectual property, conditioned on the use of Qualcomm's UMTS chipsets; and (vi) using threats regarding 2G and 3G CDMA chipset supply and pricing to coerce cell phone manufacturers into purchasing Qualcomm's UMTS chipsets. These practices have no legitimate business justification.

146. Qualcomm has undertaken this course of conduct with the specific intent of monopolizing the UMTS chipset market. There is a dangerous probability that, unless

restrained, Qualcomm's course of conduct will succeed, in violation of Section 2 of the Sherman Act, 15 U.S.C. § 2.

147. By reason of Qualcomm's violations of Section 2 of the Sherman Act, Broadcom has been injured in its business or property including through the loss of past, present and future profits, by the loss of customers and potential customers, by the loss of goodwill and product image, and by the prospective destruction of its UMTS chipset business.

148. Broadcom has suffered irreparable injury by reason of the acts, practices and conduct of Qualcomm alleged above, and will continue to suffer such injury until and unless the Court enjoins such acts, practices and conduct.

**THIRD CLAIM FOR RELIEF**  
**Unlawful Exclusive Dealing and Other Exclusionary Agreements**  
**in Violation of Section 1 of the Sherman Act**

149. Plaintiff Broadcom repeats and realleges all of the allegations in all the paragraphs above as if set forth fully herein.

150. Qualcomm's agreements with cell phone manufacturers – pursuant to which such companies agree to purchase Qualcomm's UMTS chipsets only, not to purchase competitors' chipsets, or to do so only on terms that materially disadvantage such products, constituting an effective refusal to deal on commercially reasonable terms – unreasonably restrain competition and foreclose a substantial share of the UMTS chipset market in violation of Section 1 of the Sherman Act.

151. Qualcomm's agreements unreasonably restrain trade and restrict the access of Qualcomm's competitors to significant channels of distribution, thereby restraining competition in the UMTS chipset market and foreclosing substantial interstate and foreign commerce.

152. The purpose and effect of Qualcomm's agreements is to restrain trade and competition in the UMTS chipset market.

153. Qualcomm's agreements violate Section 1 of the Sherman Act, 15 U.S.C. § 1.

154. By reason of Qualcomm's violations of Section 1 of the Sherman Act, Broadcom has been injured in its business or property including through the loss of past, present and future profits, by the loss of customers and potential customers, by the loss of goodwill and product image, and by the prospective destruction of its UMTS chipset business.

155. Broadcom has suffered irreparable injury by reason of the acts, practices and conduct of Qualcomm alleged above, and will continue to suffer such injury until and unless the Court enjoins such acts, practices and conduct.

**FOURTH CLAIM FOR RELIEF**  
**Unlawful Tying in Violation of Section 1 of the Sherman Act**

156. Plaintiff Broadcom repeats and realleges all of the allegations in all the paragraphs above as if set forth fully herein.

157. UMTS chipsets and the technology embodied in Qualcomm's self-described essential WCDMA patents are distinct products that meet separate customer and end user demands and are separately licensed or sold by Qualcomm or others.

158. Qualcomm's refusal to offer discounts to its excessive patent royalty rates or patent licensing fees unless the purchaser also buys Qualcomm's UMTS chipsets, and Qualcomm's provision of marketing incentives on the purchase of its UMTS chipsets, the combination of which is an effective refusal to deal on commercially reasonable terms, constitute unlawful tying arrangements in violation of Section 1 of the Sherman Act, 15 U.S.C. § 1. Qualcomm possesses monopoly power or appreciable economic power over the WCDMA technology markets. The purpose and effect of Qualcomm's tying arrangements is to maintain or acquire monopoly power



in the UMTS chipset market, to foreclose competition in such market and unreasonably to restrain trade and competition in such markets.

159. The tying arrangements described above foreclose a substantial amount of interstate and foreign commerce.

160. By reason of Qualcomm's violations of Section 1 of the Sherman Act, Broadcom has been injured in its business or property including through the loss of past, present and future profits, by the loss of customers and potential customers, by the loss of goodwill and product image, and by the prospective destruction of its UMTS chipset business.

161. Broadcom has suffered irreparable injury by reason of the acts, practices and conduct of Qualcomm alleged above, and will continue to suffer such injury until and unless the Court enjoins such acts, practices and conduct.

**FIFTH CLAIM FOR RELIEF**  
**Exclusive Dealing in Violation of Section 3 of the Clayton Act**

162. Plaintiff Broadcom repeats and realleges all of the allegations in all the paragraphs above as if set forth fully herein.

163. Qualcomm's agreements with cell phone manufacturers pursuant to which such companies agree to purchase only Qualcomm's UMTS chipsets or not to purchase competitors' chipsets (or to do so only on terms that materially disadvantage such products, constituting an effective refusal to deal on commercially reasonable terms) foreclose competition for a substantial share of the UMTS chipset market, substantially lessen competition in that market, and tend to create a monopoly in that market.

164. The purpose and effect of Qualcomm's agreements is to restrain trade and competition in the market for UMTS chipsets, foreclosing substantial interstate and foreign commerce. These agreements violate Section 3 of the Clayton Act, 15 U.S.C. § 14.

165. By reason of Qualcomm's violations of Section 3 of the Clayton Act, Broadcom has been injured in its business or property including through the loss of past, present and future profits, by the loss of customers and potential customers, by the loss of goodwill and product image, and by the prospective destruction of its UMTS chipset business.

166. Broadcom has suffered irreparable injury by reason of the acts, practices and conduct of Qualcomm alleged above, and will continue to suffer such injury until and unless the Court enjoins such acts, practices and conduct.

**SIXTH CLAIM FOR RELIEF**  
**Unlawful Tying in Violation of Section 3 of the Clayton Act**

167. Plaintiff Broadcom repeats and realleges all of the allegations in all the paragraphs above as if set forth fully herein.

168. UMTS chipsets and the technology embodied in Qualcomm's purported essential WCDMA patents are distinct products that meet separate customer and end user demands and are separately licensed or sold by Qualcomm or others.

169. Qualcomm's refusal to offer discounts to its excessive patent royalty rates or patent licensing fees unless the purchaser also buys Qualcomm's UMTS chipsets, and Qualcomm's provision of marketing incentives on the purchase of its UMTS chipsets, the combination of which is an effective refusal to deal on commercially reasonable terms, constitute unlawful tying arrangements in violation of Section 3 of the Clayton Act, 15 U.S.C. § 14. Qualcomm possesses monopoly power or appreciable economic power over the WCDMA technology markets. The purpose and effect of Qualcomm's tying arrangements is to acquire monopoly power in the UMTS chipset market, to foreclose competition in that market, and unreasonably to restrain trade and competition in that market.

170. The tying arrangements described above foreclose a substantial amount of interstate and foreign commerce.

171. By reason of Qualcomm's violations, Broadcom has been injured in its business or property including through the loss of past, present and future profits, by the loss of customers and potential customers, by the loss of goodwill and product image, and by the prospective destruction of its UMTS chipset business. Broadcom has been injured and suffered damages in an amount to be proved at trial and, without injunctive relief, Broadcom will continue to suffer irreparable injury as a result of Qualcomm's unlawful conduct. Broadcom has no adequate remedy at law.

**SEVENTH CLAIM FOR RELIEF**

**Maintenance of Monopoly in the Markets for 3G CDMA Technology and 3G CDMA Chipsets in Violation of Section 2 of the Sherman Act**

172. Plaintiff Broadcom repeats and realleges all of the allegations in all the paragraphs above as if set forth fully herein.

173. By acts, practices, and conduct described above, Qualcomm is unlawfully maintaining its monopoly in the 3G CDMA technology markets and 3G CDMA chipset market.

174. By reason of Qualcomm's violations of Section 2 of the Sherman Act, Broadcom has been injured in its business or property including through the loss of past, present and future profits, by the loss of customers and potential customers, by the loss of goodwill and product image, and by the prospective destruction of its UMTS chipset business.

175. By reason of Qualcomm's violations, Broadcom has been injured in its business or property including through the loss of past, present and future profits, by the loss of customers and potential customers, by the loss of goodwill and product image, and by the prospective destruction of its UMTS chipset business. Broadcom has been injured and suffered damages in

an amount to be proved at trial and, without injunctive relief, Broadcom will continue to suffer irreparable injury as a result of Qualcomm's unlawful conduct. Broadcom has no adequate remedy at law.

**EIGHTH CLAIM FOR RELIEF**

**Unlawful Purchase, Holding and Use of Stock or Assets in Violation of  
Section 7 of the Clayton Act**

176. Plaintiff repeats and realleges all of the allegations in all the paragraphs above as if set forth fully herein.

177. Qualcomm's previous acquisition, holding, and use of other companies and assets has substantially lessened competition in relevant markets for 2G CDMA technology and chipsets and/or 3G CDMA and UMTS/WCDMA technology and chipsets. Similarly, the result of Qualcomm's acquisition, holding, and use of Flarion and its assets will be to substantially lessen competition and to tend to create a monopoly in the markets for B3G and 4G technology, will foreclose substantial interstate foreign commerce, and will violate Section 7 of the Clayton Act, 15 U.S.C. § 18.

178. Broadcom will be injured as a result of Qualcomm's unlawful acquisition, holding and use of these acquired assets. Without injunctive relief, Broadcom will continue to suffer irreparable injury as a result of Qualcomm's unlawful conduct, for which there is no adequate legal remedy.

**NINTH CLAIM FOR RELIEF**

**Violations of New Jersey Antitrust Act and Other State Antitrust, Unfair Competition, and  
Unfair Trade Practices Laws**

179. Plaintiff Broadcom repeats and realleges all of the allegations in all the paragraphs above as if set forth fully herein.

180. Qualcomm induced SDOs, relying on Qualcomm's promise to provide FRAND licensing, to adopt 3G standards that incorporate Qualcomm's patents, and then has unfairly refused to license its 3G CDMA and WCDMA patents on FRAND terms. In addition to deceiving the SDOs and refusing to license on FRAND terms, Qualcomm has engaged in anticompetitive, unfair, and deceptive methods of competition in order to coerce cell phone manufacturers into purchasing Qualcomm 3G CDMA chipsets and UMTS chipsets and has unfairly competed in the sale of 3G CDMA chipsets and UMTS chipsets. In addition, Qualcomm's acquisition, holding, and use of Flarion and its assets will substantially lessen competition and tend to create a monopoly in the markets for B3G and 4G technology. Both the significant ongoing harm, and the incipient and threatened harm, to competition in the markets described above from such conduct outweigh any justifications for such conduct or competitive benefits therefrom.

181. The foregoing conduct constitutes monopolization of the WCDMA technology markets, attempted monopolization of the UMTS chipset market, maintenance of monopoly in the 3G CDMA chipset market and 3G CDMA technology markets, and restraint of trade in violation of N.J. Stat. § 56:9-4(a); constitutes unlawful tying and exclusive dealing agreements restraining competition in the markets for UMTS chipsets and WCDMA technology, in violation of N.J. Stat. § 56:9-3; and constitutes unfair and unlawful competition and fraudulent conduct under the antitrust, unfair competition, and unfair trade practices laws of the states of Alaska, Arizona, California, Colorado, Connecticut, District of Columbia, Florida, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Mexico,

New York, North Carolina, North Dakota, Oklahoma, Oregon, Rhode Island, South Carolina, South Dakota, Texas, Utah, Virginia, and Washington.

182. Qualcomm has licensed 3G CDMA and WCDMA technology and sold 3G CDMA and UMTS chipsets for use in each of the states listed in paragraph 181 herein.

183. By reason of Qualcomm's violations, Broadcom has been injured in its business or property including through the loss of past, present and future profits, by the loss of customers and potential customers, by the loss of goodwill and product image, and by the prospective destruction of its UMTS chipset business. Broadcom has been injured and suffered damages in an amount to be proved at trial and, without injunctive relief, Broadcom will continue to suffer irreparable injury as a result of Qualcomm's unlawful conduct. Broadcom has no adequate remedy at law.

**TENTH CLAIM FOR RELIEF**  
**Tortious Interference With Prospective Economic Advantage**

184. Plaintiff Broadcom repeats and realleges all of the allegations in all the paragraphs above as if set forth fully herein.

185. Qualcomm has undertaken a willful and malicious course of conduct to foreclose Broadcom from operating as a meaningful competitor in the UMTS chipset market. Through its negotiations with major UMTS cell phone manufacturers, Broadcom had a prospective economic relationship with each such manufacturer for the sale of UMTS chipsets. But for Qualcomm's anticompetitive conduct, there was a reasonable probability that Broadcom would have been able to successfully secure business relationships for the sale of UMTS chipsets. Through anticompetitive, unjustifiable means, Qualcomm intentionally interfered with and frustrated Broadcom's efforts to compete. Qualcomm has done so without legitimate justification or excuse.

186. By reason of Qualcomm's violations, Broadcom has been injured in its business or property including through the loss of past, present and future profits, by the loss of customers and potential customers, by the loss of goodwill and product image, and by the prospective destruction of its UMTS chipset business. Broadcom has been injured and suffered damages in an amount to be proved at trial and, without injunctive relief, Broadcom will continue to suffer irreparable injury as a result of Qualcomm's unlawful conduct. Broadcom has no adequate remedy at law. Broadcom is also entitled to punitive damages for Qualcomm's willful and malicious conduct.

**ELEVENTH CLAIM FOR RELIEF**  
**Breach of Contract**

187. Plaintiff Broadcom repeats and realleges all of the allegations in all the paragraphs above as if set forth fully herein.

188. As set forth above, Qualcomm entered into actual or implied contracts with various SDOs under which it agreed that, as a condition to those SDOs adopting 3G wireless telephony standards that required Qualcomm's purportedly essential patents to implement, Qualcomm would license such patents on FRAND terms. Each potential licensee, including Broadcom, was an intended beneficiary of those contracts. Qualcomm has breached those contracts by not licensing its "essential" patents on FRAND terms.

189. As a result of these breaches, Broadcom has been injured in its business or property through the loss of past, present and future profits, by the loss of customers and potential customers, by the loss of goodwill and product image, and by the prospective destruction of its UMTS chipset business.

190. By reason of Qualcomm's violations, Broadcom has been injured in its business or property including through the loss of past, present and future profits, by the loss of customers



and potential customers, by the loss of goodwill and product image, and by the prospective destruction of its UMTS chipset business. Broadcom has been injured and suffered damages in an amount to be proved at trial and, without injunctive relief, Broadcom will continue to suffer irreparable injury as a result of Qualcomm's unlawful conduct. Broadcom has no adequate remedy at law.

**TWELFTH CLAIM FOR RELIEF**  
**Promissory Estoppel**

191. Plaintiff Broadcom repeats and realleges all of the allegations in all the paragraphs above as if set forth fully herein.

192. Qualcomm made a clear and definite promise to potential licensees of its WCDMA technology through its promise to various SDOs that it would license its WCDMA technology on a FRAND basis.

193. The intended purpose of this FRAND promise was to induce reliance. Qualcomm knew or should have reasonably expected that this promise would induce potential licensees such as Broadcom to take (or refrain from taking) certain actions.

194. Broadcom did take action to develop a UMTS chipset business in reliance on Qualcomm's promise to license its WCDMA technology on a FRAND basis.

195. Broadcom has been damaged as a result of its reasonable reliance on Qualcomm's promise because of Qualcomm's failure to license its WCDMA technology on FRAND terms as it had promised.

**THIRTEENTH CLAIM FOR RELIEF**  
**Fraud**

196. Plaintiff Broadcom repeats and realleges all of the allegations in all the paragraphs above as if set forth fully herein.

197. Qualcomm represented to the SDOs and to the public that if its patented technology was incorporated into the UMTS standard, it would license that technology to all practitioners of the standard on FRAND terms.

198. Qualcomm made the foregoing representations knowing them to be false in that it had no intent to license on FRAND terms and with the intent to induce reliance on its representations. Qualcomm did not disclose to the SDOs that it had no intention of licensing its technology on FRAND terms.

199. Broadcom reasonably relied upon the foregoing representations. In reliance thereon, Broadcom invested millions of dollars in developing and acquiring UMTS chipset technology.

200. The foregoing actions and conduct by Qualcomm constitute intentional and material misrepresentation that has damaged and will continue to damage Broadcom.

## **VIII.**

### **PRAYER FOR RELIEF**

WHEREFORE, plaintiff Broadcom requests that the Court:

A. Adjudge and decree that Qualcomm has violated Sections 1 and 2 of the Sherman Act, 15 U.S.C. §§ 1 and 2; Section 3 of the Clayton Act, 15 U.S.C. § 14; Section 7 of the Clayton Act, 15 U.S.C. § 18; the New Jersey Antitrust Act, N.J. Stat. §§ 56:9-3 and 56:9-4, and the other state antitrust, unfair competition, and unfair trade practices laws set forth above; that Qualcomm has tortiously interfered with Broadcom's prospective economic advantage; and that Qualcomm's conduct constitutes breach of contract, promissory estoppel, and fraud;

B. On plaintiff Broadcom's First through Ninth claims for relief, enter judgment against Qualcomm for treble the amount of Broadcom's damages as proven at trial in accordance with Section 4 of the Clayton Act, 15 U.S.C. § 15, N.J. Stat. § 56:9-12, and, to the extent

permitted by law, the antitrust, unfair competition, and unfair trade practices laws of the other states set forth above;

C. On plaintiff Broadcom's Tenth through Thirteenth claims for relief, enter judgment against Qualcomm for the amount of Broadcom damages as proven at trial and, on Broadcom's Tenth and Twelfth claims for relief, for punitive damages;

D. Grant plaintiff Broadcom injunctive relief pursuant to 15 U.S.C. § 26, N.J. Stat. § 56:9-10, and the other state antitrust, unfair competition, and unfair trade practices laws set forth above sufficient to restrain Qualcomm's continuing violations of 15 U.S.C. §§ 1, 2, and 14, N.J. Stat. §§ 56:9-3 and 56:9-4, and the antitrust, unfair competition, and unfair trade practices laws of the states set forth above;

E. Grant plaintiff Broadcom injunctive relief pursuant to 15 U.S.C. § 26, N.J. Stat. § 56:9-10, and the other state antitrust, unfair competition, and unfair trade practices laws set forth above sufficient to restrain and prevent Qualcomm's violations of 15 U.S.C. § 18, N.J. Stat. §§ 56:9-3 and 56:9-4, and the antitrust, unfair competition, and unfair trade practices laws of the states set forth above, including but not limited to injunctive relief prohibiting Qualcomm's acquisition of Flarion, requiring divestiture of some or all of the assets acquired, and/or imposing conditions on Qualcomm's use of some or all of the assets acquired.

F. Award plaintiff Broadcom its costs and expenses of litigation, including attorneys' fees and expert witness fees; and

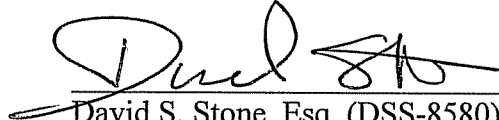
G. Enter judgment against Qualcomm for such other and further relief as the Court deems just and proper.

**DEMAND FOR JURY TRIAL**

Plaintiff Broadcom Corporation hereby demands trial by jury in this action on all issues so triable.

Dated: September 19, 2005

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'David Stone', with a stylized flourish at the end.

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**CERTIFICATE OF SERVICE**

I certify that on September 19, 2005, I electronically filed with the Clerk of the United States District Court, District of New Jersey, Plaintiff's First Amended Complaint, and served a copy of the First Amended Complaint upon the following parties via Federal Express:

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Dated: September 19, 2005

By: s/ David S. Stone  
David S. Stone